REMARKS

In the Action, claims 1-12 are rejected. In response, claim 6 is amended to recite the step of treating the water-absorbent resin particles to enhance the liquid permeability of claim 9. Claim 9 is cancelled.

In view of these amendments and the following comments, reconsideration and allowance are requested.

Rejection of Claims 6-12

Claims 6-12 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative obvious under 35 U.S.C. § 103(a) as being obvious over JP 2000-63527 to Yorimichi.

Independent claim 6 is amended to recite the step of treating the water-absorbent resin particles to enhance the liquid permeability. This amendment is submitted to overcome the rejection. JP '527 does not disclose or suggest an aqueous-liquid-absorbing agent where the water-absorbent resin particles are treated to enhance the liquid permeability so that the claims are not anticipated by or obvious over Yorimichi.

Yorimichi is silent regarding a treatment of the water-absorbent resin particles for liquid permeability enhancement. One skilled in the art would not be motivated to treat the water-absorbent resin particles based on the disclosure of Yorimichi. The Action presents no rationale to suggest that it would have been obvious to arrive at the claimed invention.

The present invention is directed to an aqueous-liquid-absorbing agent that is particularly suitable for replacing the fibrous component of an absorbent article. As disclosed on pages 1 and 2 of the specification, the aqueous-liquid-absorbing agent is suitable for use in a diffusing layer of a diaper or other absorbent structure. Conventional absorbent structures utilize a fibrous diffusing layer to diffuse the aqueous liquid throughout the absorbent article.

The conventional water-absorbent resins are not suitable for use as a diffusing layer so that the absorbent structure requires the fibrous component of the diffusing layer. The conventional water-absorbent resins are suitable only for use as absorbent "core" particles.

The aqueous-liquid-absorbing agent of the invention is not specifically intended for use as a core particle as in the conventional superabsorbent polymers. The diffusing layer of conventional absorbent structures such as diapers includes pulp or other fibrous material as a diffusing layer. The fibrous material is generally needed to provide the desired absorbent properties of the absorbent structure. The aqueous-liquid-absorbing agent of the invention is capable of replacing the pulp of the conventional absorbent structures, thereby reducing the thickness of the absorbent structures while maintaining the desired diffusing properties.

Applicants have found that the combination of the properties of the aqueous-liquid-absorbing agent as recited in the claims are important in providing the desired properties for replacing the fibrous diffusing layer of the conventional absorbent structures. As disclosed on page 2 of the specification, Applicants have found that the performance of the aqueous-liquid-absorbing agent requires a water-absorption capacity and an absorption rate within a specified range. Applicants further discovered that for the aqueous-liquid-absorbing agent to diffuse the aqueous liquid rapidly in vertical and horizontal directions after having absorbed the liquid, the aqueous-liquid-absorbing agent needs to exhibit a saline flow conductivity of not less than 400 x 10^{-7} $cm^3 \cdot s/g$ and that the ability to retain the aqueous liquid requires the aqueous-liquid-absorbing agent to exhibit a wet porosity of not less than 20%. These features are not disclosed or suggested in the art of record.

JP '527 does not disclose or suggest a process for the production of an aqueous-liquid-absorbing agent including water-absorbent resin particles as essential components obtained from an aqueous monomer solution of a water soluble ethylenically unsaturated monomer and an internal crosslinking agent in an amount of not less than 0.2 mol% based on

the weight of the monomer. JP '527 does not polymerize the monomer solution to form a hydrogel, extrude the hydrogel to pulverize the hydrogel, dry the pulverized gel particles to obtain an aqueous-liquid-absorbing agent, and treat the water-absorbent resin particles for liquid permeability enhancement as in claim 6. Accordingly, claim 6 is not anticipated by or obvious over JP '527.

Claims 7-12 are also not anticipated by or obvious over JP '527 for reciting additional features of the invention that are not disclosed or suggested in JP '527. JP '527 does not disclose forming at least a portion of the pulverized gel particles as agglomerates as in claim 7 either expressly or inherently. The Action refers to paragraph 0046 of JP '527 for disclosing a uniformly ground particle size. There is no suggestion of agglomerating the particles or at least a portion of the particles. Accordingly, claim 7 is not obvious over JP '527.

JP '527 also does not disclose surface crosslinking the water-absorbent resin particles as in claim 8, adding a liquid-permeability-enhancing agent of claim 10, or adding a liquid-permeability-enhancing agent selected from the group consisting of polyvalent metal compounds, polycationic compounds, and inorganic fine particles as in claim 11, either alone or in combination with the features of claim 6.

JP '527 also does not disclose forming the water-absorbent resin particles from an aqueous monomer solution having a monomer concentration of not lower than 35 wt% or higher than a saturated concentration as in claim 12. There is no suggestion of the claimed concentration of the monomer solution in JP '527 in combination with the features of claim 6. Accordingly, claim 12 is not anticipated by or obvious over JP '527.

In view of the above comments, claims 6-12 are submitted to be allowable over the art of record.

Rejection of Claims 1, 2, 4 and 5

Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent Publication No. 2002/0165288 to Frenz et al.

As noted above, the aqueous-liquid-absorbing agent of the present invention is suitable for use in replacing the fibrous materials of an absorbent structure such as a diaper. The aqueous-liquid-absorbing agent of the present invention has an absorption performance that is capable of replacing the fibrous materials of the conventional absorbent structures without reducing the diffusing properties. The aqueous-liquid-absorbing agent of the invention is used for diffusion layers in the absorbent structure instead of being used as water-absorbent resin cores of the conventional water-absorbent resins. This enables the absorbent structures to be made thinner by replacing the fibrous materials of the diffusion layers with the aqueous-liquid-absorbing agent of the present invention. As noted on pages 2 and 3 of the specification, the claimed properties enable the aqueous-liquid-absorbing agent to be suitable for use as a replacement for the fibrous materials.

The required properties for the aqueous-liquid-absorbing agent of claim 1 include the absorption rate (FSR) of not less than 0.2 g/g/s, a water absorption capacity of 10 to 20 g/g, a saline flow conductivity of not less than 400 x 10^{-7} $cm^3 \cdot s/g$, and a wet porosity of not less than 20%. Applicants have found that the combination of each of these properties provide an aqueous-liquid-absorbing agent possessing excellent properties compared to the conventional fibrous pulp. Frenz et al. clearly does not disclose or suggest these features or the combination of the claimed features.

Each of the properties of the aqueous-liquid-absorbing agent of claim 1 provides a specific function and together provides the desired properties. The aqueous-liquid-absorbing agent of the claimed invention has an absorption rate that is higher than conventional

superabsorbent polymers. The aqueous-liquid-absorbing agent of the claimed invention does not swell as easily as the conventional superabsorbent polymers.

The saline flow conductivity of the claimed invention is different from the saline flow conductivity disclosed in Frenz et al. The saline flow conductivity of Frenz et al is measured under different conditions so that the saline flow conductivity of Frenz et al. does not correspond to the saline flow conductivity of the claimed aqueous-liquid-absorbing agent.

The saline flow conductivity as measured according to the present invention uses a large amount of the aqueous-liquid-absorbing agent, and thus, obtains a large numerical value. The conditions for measuring the saline flow conductivity of the invention would result in the absorbent composition of Frenz et al. to have a numerical value of approximately 0. The conditions for determining the saline flow conductivity of the present invention exhibits a higher saline flow conductivity compared to the values disclosed in Frenz et al. The method for determining the saline flow conductivity of the present invention is disclosed on pages 33-37 of the specification. Thus, Frenz et al. does not disclose or suggest that the saline flow conductivity is determined according to the method of the present invention.

The Action further suggests that the water absorption capacity (CRC) of Frenz et al. overlaps with the claimed range. Claim 1 specifically recites the water absorption capacity of 10 to 20 g/g. In contrast, Frenz et al. specifically discloses the water absorption capacity of at least 24 g/g. Thus, the claimed water absorption capacity is clearly outside the range disclosed in Frenz et al.

The Action appears to suggest that the water absorption capacity of Frenz et al. is sufficiently close to the claimed invention that the water absorption capacity inherently overlaps with the claimed invention. Applicants respectfully submit this position is without merit. Paragraph 0018 of Frenz et al. expressly discloses the water absorption capacity of at least 24 g/g, preferably greater than or equal to 26 g/g, and most preferably greater than or

equal to 35 g/g. Thus, Frenz et al. expressly discloses the water-absorption capacity being significantly higher than the claimed range. The expressly disclosed range does not inherently overlap with the claimed range. Frenz et al. expressly teaches that the higher the water absorption capacity is most preferred, and thus, effectively teaches away from the claimed lower range. In view of the disclosure of Frenz et al., one of ordinary skill in the art would not select a water-absorption capacity in the range of 10 to 20 g/g as in the claimed invention. Based on the disclosure of Frenz et al., one skilled in the art would have no reasonable expectation of success in providing an aqueous-liquid-absorbing agent having the claimed water absorption capacity that is well below the amounts disclosed in Frenz et al. Accordingly, claim 1 is not obvious over Frenz et al.

Frenz et al. also does not disclose not less than 90 wt% of particles having a particle diameter in the range of 150 to 600 μm as in claim 2, surface-crosslinked water-absorbing particles as in claim 4, or the addition of a liquid-permeability-enhancing agent of claim 5, in combination with the features of claim 1. Accordingly, claims 1, 2, 4 and 5 are not obvious over Frenz et al.

Rejection of Claim 3

Claim 3 is rejected under 35 U.S.C. § 103(a) as being obvious over Frenz et al. in view of JP '527. JP '527 is cited for disclosing agglomerated particles. For the reasons discussed above, JP '527 provides no suggestion either expressly or inherently that the particles are agglomerated. The Action provides no basis to support the position. Stacking particles one on another would not inherently agglomerate the particles as apparently suggested on page 5 of the Action. Agglomeration of the particles requires more than mere contact or stacking of the particles. JP '527 is silent regarding the agglomerating of the

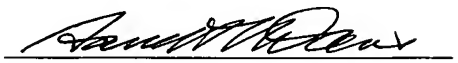
particles. Accordingly, it would not have been obvious to one of ordinary skill in the art to agglomerate the particles of Frenz et al. based on the disclosure of JP '527.

Obviousness-Type Double Patenting Rejection

Claims 1-12 are provisionally rejected for obviousness-type double patenting over copending application Serial No. 11/526,525 in view of U.S. Patent Publication No. 2005/0031872 to Schmidt et al. The present claims are not obvious over the claims of the copending application. In particular, the pending claims of the copending application require a mixture of (1) a primary aqueous-liquid-absorbing agent and (2) a secondary aqueous-liquid-absorbing agent where each of the aqueous-liquid-absorbing agents have a different water absorption capacity and a different saline flow conductivity. The claims of the present application do not refer to a primary and secondary aqueous-liquid-absorbing agent, and thus, are not obvious over the claims of the pending application. Furthermore, the Action provides no basis for the position that the absorbent article of the copending claims inherently has the claimed wet porosity or that it would have been obvious to modify the absorbent articles defined by the claims of the copending application to provide the wet porosity based on the disclosure of Schmidt et al. Accordingly, Applicants submit the obviousness-type double patenting rejection should be withdrawn.

In view of these amendments and the above comments, reconsideration and allowance are requested.

Respectfully submitted,



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Dated: Dec 7, 2009